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he is hereby authorized to charge any fees, including extension fees, or other relief which may be required, or credit any overpayment to Deposit Account No. 06-1300 (Our Order No. A-70127/RMS/BTC/DLR).

Please enter the amendments below and consider the following remarks.

In the claims:

Please amend the following claims:

36. An apparatus for electrical detection of molecular interactions between an immobilized oligonucleotide probe and a target nucleic acid molecule, said apparatus comprising a supporting substrate comprising:

- Ci
- a) a plurality of microelectrodes each comprising a conjugated polymer film and a different immobilized oligonucleotide probe;
 - b) a voltage source connected to said microelectrodes;
 - c) an electrolyte solution comprising a solution of Li⁺ ions; and
 - d) a detector connected to said microelectrodes.

37. An apparatus for electrical detection of molecular interactions between an immobilized oligonucleotide probe and a target nucleic acid molecule, said apparatus comprising a supporting substrate comprising:

- a) a plurality of microelectrodes each comprising a polymer gel pad and a different immobilized oligonucleotide probe;

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- b) a voltage source connected to said microelectrodes;
- c) an electrolyte solution comprising a solution of Li^+ ions; and
- d) a detector connected to said microelectrodes.

38. An apparatus according to claim 36 or 37 wherein said apparatus further comprises a counter-electrode.

39. An apparatus according to claim 36 or 37 wherein said apparatus further comprises a reference electrode.

40. An apparatus according to claim 36 or 37 wherein said detector will detect changes in impedance at each microelectrode.

41. An apparatus according to claim 36 or 37 wherein said solution of Li^+ ions comprises a solution of LiClO_4 .

42. An apparatus according to claim 41 wherein said solution of LiClO_4 is about 0.1 M.

43. An apparatus according to Claims 36 or 37 wherein the microelectrodes comprise a conductive material and an insulating material.

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44. An apparatus according to Claim 43 wherein the conductive material is solid or porous gold, silver, platinum, titanium, copper, metal oxide, metal nitride, metal carbide, or graphite carbon.

45. An apparatus according to Claim 44 wherein the conductive material is platinum.

46. An apparatus according to Claim 44 wherein the conductive material is gold.

47. An apparatus according to Claim 43 wherein the insulating material is glass, silicon, plastic, rubber, fabric, ceramic or a combination thereof.

48. An apparatus according to Claim 47 wherein the insulating material is silicon.

49. An apparatus according to Claim 47 wherein the insulating material is glass.

50. An apparatus according to Claim 43 wherein the conductive material is embedded in the substrate and the substrate comprises the insulating material.

51. An apparatus according to Claim 43 wherein the conductive material is silver/silver chloride.

52. An apparatus of Claims 36 or 37 wherein the supporting substrate comprises ceramic, glass,

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silicon, fabric or plastic.

53. An apparatus of Claim 36 wherein the conjugated polymer or copolymer used for probe attachment includes, but is not limited to, polypyrrole, polythiophene, polyaniline, polyfuran, polypyridine, polycarbazole, polyphenylene, poly(phenylvinylene), polyfluorene, polyindole, their derivatives, their copolymers and their combinations thereof.

54. An apparatus of Claims 36 or 37 wherein probes are attached to microelectrodes using a neutral pyrrole matrix.

55. An apparatus of Claim 37 wherein the gel polymer pads are polyacrylamide.

REMARKS

Claims 36-55 are pending in the instant application. Originally, the claims were misnumbered and their dependencies needed to be altered. Accordingly, in this Amendment, Applicants have renumbered the claims from 36-55 and corrected dependencies of claims 38-55. However, due to dependency problems, the Examiner did not consider claims 38-55 in the Office action. Claims 36 and 37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heller et al. (Heller), in view of Wiles et al. (Wiles).

None of these amendments have been made with the intention or the result of narrowing